		Exploring the E	extreme
		2002 Scier	
		Core Curricu	ulum
Utah Science			
Grade 3			
Activity/Lesson	State	Standards	
			Predict and observe what happens when a
Finding the Center of			force is applied to an object (e.g., wind,
Gravity Using Rulers	UT	SCI.3.3.2.a	flowing water).
			Use measurement to demonstrate that
Finding the Center of			heavier objects require more force than
Gravity Using Rulers		SCI.3.4.1.b	lighter ones to overcome gravity.
Finding the Center of			Predict and observe what happens when a
Gravity Using Plumb			force is applied to an object (e.g., wind,
Lines	UT	SCI.3.3.2.a	flowing water).
Finding the Center of			Use measurement to demonstrate that
Gravity Using Plumb			heavier objects require more force than
Lines	UT	SCI.3.4.1.b	lighter ones to overcome gravity.
			Predict, measure, and graph the temperature
Finding the Center of			changes produced by a variety of
Gravity Using Plumb			mechanical machines and electrical devices
Lines	UT	SCI.3.5.2.c	while they are operating.
Changing the Center			Predict and observe what happens when a
of Gravity Using			force is applied to an object (e.g., wind,
Moment Arms	UT	SCI.3.3.2.a	flowing water).
			Conduct a simple investigation to show what
Changing the Center			happens when objects of various weights
of Gravity Using			collide with one another (e.g., marbles,
Moment Arms	UT	SCI.3.3.2.d	balls).
Changing the Center			Use measurement to demonstrate that
of Gravity Using			heavier objects require more force than
Moment Arms	UT	SCI.3.4.1.b	lighter ones to overcome gravity.
Changing the Center			
of Gravity Using			
Moment Arms	UT	SCI.3.4.2.c	Pose questions about gravity and forces.
			Predict, measure, and graph the temperature
Changing the Center			changes produced by a variety of
of Gravity Using			mechanical machines and electrical devices
Moment Arms	UT	SCI.3.5.2.c	while they are operating.
		Exploring the E	
		2002 Scien	
	Г	Core Curricu	ulum
Utah Science			
Grade 4	<u> </u>		
Activity/Lesson	State	Standards	
			Observe, measure, and record data on the
			basic elements of weather over a period of
Finding the Center of			time (i.e., precipitation, air temperature, wind
Gravity Using Rulers	Uſ	SCI.4.2.1.b	speed and direction, and air pressure).

Changing the Center			Observe, measure, and record data on the basic elements of weather over a period of
of Gravity Using Moment Arms	UT	SCI.4.2.1.b	time (i.e., precipitation, air temperature, wind speed and direction, and air pressure).
		Exploring the E	
		2002 Scier Core Currici	
Utah Science	1	Core Currici	Jium
Grade 5			
Activity/Lesson	State	Standards	
7.0.171.17.2000011	Otato	Otaniaa ao	
Vectoring	UT	SCI.5.3.1.d	Research and report the use of magnets that is supported by sound scientific principles.
			Research and report the use of magnets that
Fuel Efficiency	UT	SCI.5.3.1.d	is supported by sound scientific principles.
		Exploring the E	
		2002 Scier Core Currici	
Utah Science		Core Currici	lium
Grade 6			
Activity/Lesson	State	Standards	
7 to 11 v 11 y / 20000 11	Julia	Otanida do	Describe the role of computers in
			understanding the solar system (e.g.,
			collecting and interpreting data from
			observations, predicting motion of objects,
Jet Propulsion	UT	SCI.6.3.2.b	operating space probes).
			Design an investigation, construct a chart,
			and collect data depicting the phases of the
Vectoring	UT	SCI.6.1.1.d	moon.
			Describe the role of computers in
			understanding the solar system (e.g.,
			collecting and interpreting data from
Manta dia a		001000	observations, predicting motion of objects,
Vectoring	UT	SCI.6.3.2.b	operating space probes).  Observe and describe, with the use of
			•
			models, heat energy being transferred through a fluid medium (liquid and/or gas) by
Vectoring	UT	SCI.6.6.1.d	convection currents.
Vocioning		JOI.0.0.1.0	Design and conduct an investigation on the
Vectoring	UT	SCI.6.6.1.e	movement of heat energy.
	1	22	Use models and graphs that accurately
			depict scale to compare the size and
			distance between objects in the solar
Fuel Efficiency	UT	SCI.6.3.1.c	system.
-			Display results in an appropriate format (e.g.,
Fuel Efficiency	UT	SCI.6.5.2.d	graphs, tables, diagrams).

			Observe and describe, with the use of
			models, heat energy being transferred
			through a fluid medium (liquid and/or gas) by
Fuel Efficiency	UT	SCI.6.6.1.d	convection currents.
1 del Emolerioy	01	001.0.0.1.0	convection currents.
		Exploring the E	Extreme
		2002 Scier	
		Core Curric	ulum
Utah Science			
Grade 7			
Activity/Lesson	State	Standards	
			Describe the limitations of using models to
			represent atoms (e.g., distance between
			particles in atoms cannot be represented to
			scale in models, the motion of electrons
Jet Propulsion	UT	SCI.7.1.1.d	cannot be described in most models).
-			Observe and describe the sorting of earth
			materials in a mixture based on density and
			particle size (e.g., sorting grains of sand of
			the same size with different densities, sort
			materials of different particle size with equal
Jet Propulsion	UT	SCI.7.2.1.c	densities).
			Defend the importance of observation in
Jet Propulsion	UT	SCI.7.5.1.c	scientific classification.
<u> </u>			Design a procedure to measure mass and
Vectoring	UT	SCI.7.1.2.e	volume of gases.
			Defend the importance of observation in
Vectoring	UT	SCI.7.5.1.c	scientific classification.
<u> </u>			Describe the limitations of using models to
			represent atoms (e.g., distance between
			particles in atoms cannot be represented to
Center of Gravity,			scale in models, the motion of electrons
Pitch, Yaw	UT	SCI.7.1.1.d	cannot be described in most models).
Center of Gravity,			Design a procedure to measure mass and
Pitch, Yaw	UT	SCI.7.1.2.e	volume of gases.
•			Model the cell processes of diffusion and
Center of Gravity,			osmosis and relate this motion to the motion
Pitch, Yaw	UT	SCI.7.3.1.d	of particles.
· · · · · · · · · · · · · · · · · · ·			Design a procedure to measure mass and
Fuel Efficiency	UT	SCI.7.1.2.e	volume of gases.
		Exploring the E	
		2002 Scier	
116-1-0-1		Core Currice	ulum T
Utah Science			
Grade 8	01-1-	04	
Activity/Lesson	State	Standards	
			Identify observable evidence of a physical
Jet Propulsion	UT	SCI.8.1.2.a	change (e.g., change in shape, size, phase).
Set E IOPUISION	101	JUI.0. 1.2.a	Ghange (e.g., Ghange III Shape, Size, phase).

			Identify observable evidence of a chemical
			change (e.g., color change, heat or light
Jet Propulsion	UT	SCI.8.1.2.b	given off, change in odor, gas given off).
oct i ropulsion	01	001.0.1.2.0	Observe and describe chemical reactions
			involving atmospheric oxygen (e.g., rust, fire,
Jet Propulsion	UT	SCI.8.1.2.c	respiration, photosynthesis).
Jet i Topulsion	01	301.0.1.2.0	Use a model to demonstrate how erosion
Jet Propulsion	UT	SCI.8.3.2.c	changes the surface of Earth.
oct i ropulsion	01	001.0.3.2.0	Investigate the principles used to engineer
Jet Propulsion	UT	SCI.8.4.3.e	changes in forces and motion.
oct i ropulsion	01	001.0.4.0.0	changes in forces and motion.
			Investigate and report on the chemical and
Vectoring	UT	SCI.8.1.1.c	physical properties of a particular substance.
Voctoring		001.0.1.1.0	physical properties of a particular substance.
			Identify observable evidence of a physical
Vectoring	UT	SCI.8.1.2.a	change (e.g., change in shape, size, phase).
vocating		00110111210	Identify observable evidence of a chemical
			change (e.g., color change, heat or light
Vectoring	UT	SCI.8.1.2.b	given off, change in odor, gas given off).
v cotoning		00110111210	Design and build structures to support a
Vectoring	UT	SCI.8.4.2.d	load.
v cotoning		00110111210	Engineer (design and build) a machine that
Vectoring	UT	SCI.8.4.2.e	uses gravity to accomplish a task.
· cotog		00	Engineer a device that uses levers or
			inclined planes to create a mechanical
Vectoring	UT	SCI.8.4.3.b	advantage.
J			Engineer a device that uses friction to control
Vectoring	UT	SCI.8.4.3.c	the motion of an object.
			Design and build a complex machine
Vectoring	UT	SCI.8.4.3.d	capable of doing a specified task.
			Investigate the principles used to engineer
Vectoring	UT	SCI.8.4.3.e	changes in forces and motion.
Center of Gravity,			Use a model to demonstrate how erosion
Pitch, Yaw	UT	SCI.8.3.2.c	changes the surface of Earth.
Center of Gravity,			Design and build structures to support a
Pitch, Yaw	UT	SCI.8.4.2.d	load.
Center of Gravity,			Engineer (design and build) a machine that
Pitch, Yaw	UT	SCI.8.4.2.e	uses gravity to accomplish a task.
			Engineer a device that uses levers or
Center of Gravity,			inclined planes to create a mechanical
Pitch, Yaw	UT	SCI.8.4.3.b	advantage.
Center of Gravity,			Engineer a device that uses friction to control
Pitch, Yaw	UT	SCI.8.4.3.c	the motion of an object.
Center of Gravity,			Design and build a complex machine
Pitch, Yaw	UT	SCI.8.4.3.d	capable of doing a specified task.
Center of Gravity,			Investigate the principles used to engineer
Pitch, Yaw	UT	SCI.8.4.3.e	changes in forces and motion.
			Identify observable evidence of a physical
Fuel Efficiency	UT	SCI.8.1.2.a	change (e.g., change in shape, size, phase).

			11
			Identify observable evidence of a chemical
			change (e.g., color change, heat or light
Fuel Efficiency	UT	SCI.8.1.2.b	given off, change in odor, gas given off).
			Measure and graph the relationship between
			the states of water and changes in its
Fuel Efficiency	UT	SCI.8.1.3.c	temperature.
			Use a model to demonstrate how erosion
Fuel Efficiency	UT	SCI.8.3.2.c	changes the surface of Earth.
			Design and build structures to support a
Fuel Efficiency	UT	SCI.8.4.2.d	load.
			Engineer (design and build) a machine that
Fuel Efficiency	UT	SCI.8.4.2.e	uses gravity to accomplish a task.
			Engineer a device that uses friction to control
Fuel Efficiency	UT	SCI.8.4.3.c	the motion of an object.
			Design and build a complex machine
Fuel Efficiency	UT	SCI.8.4.3.d	capable of doing a specified task.
			Investigate the principles used to engineer
Fuel Efficiency	UT	SCI.8.4.3.e	changes in forces and motion.